



# CLIMATE SUMMARY MARCH 2018

Samoa Meteorology Division  
 Ministry of Natural Resources and Environment

W: [www.samet.gov.ws](http://www.samet.gov.ws)

Ph: (685) 20855/20856

F: [www.facebook.com/Samoa Meteorological Services](https://www.facebook.com/Samoa%20Meteorological%20Services)

## HIGHLIGHTS

- ◆ Generally, 'below average' rainfall was experienced for the month of March. **Pg. 1 & 2**
- ◆ Alafua recorded the warmest day time temperature of 34.1° C, while Afiamalu registered the coolest night time temperature of 16.1° C. **Pg. 3**
- ◆ Easterlies to Southerly winds were recorded for most stations, with light winds of 1-10km/hr being the most occurring wind speed. **Pg 4 & 5**
- ◆ ENSO status is now within neutral levels, and will continue to remain in neutral phase as suggested by climate models and ENSO indicators. **Pg 6**
- ◆ Warmer sub surface anomalies have developed over the western equatorial Pacific Ocean and have enhanced towards the eastern Pacific Ocean, while cooler anomalies have weakened. **Pg 6**

ISSUED: APRIL 2018

Figure 1: SPCZ Position in March 2018

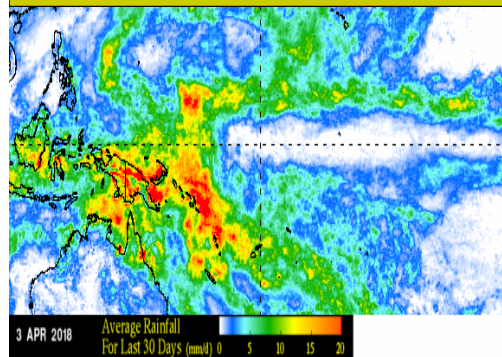
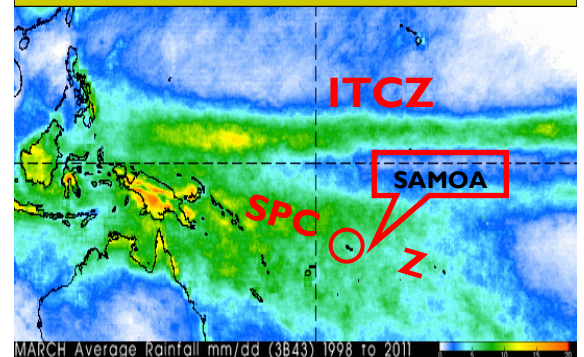


Figure 2: Normal Position of SPCZ in March



## GLOBAL SCALE OBSERVATIONS

The Inter Tropical Convergence Zone (ITCZ) propagated northward prior to its normal March position. There was not much activity observed for the ITCZ, apart from the western side where it enhanced over the New Guinea Islands. The South Pacific Convergence Zone (SPCZ), on the other hand remained in its normal position, and was more active. Rainfall activity enhanced in the Western Pacific farther from the Samoan Islands.

## LOCAL SCALE OBSERVATIONS

Referring to table 1 on page 2, rainfall statistics showed that Letui station received the highest precipitation of 389.8mm and Afiamalu received the second highest of 352.1mm for the month of March. Moreover, Letui station also received the highest 1 day fall of 108.6mm on the 30<sup>th</sup>, with Faleolo registering the second highest of 102.0mm on the 11<sup>th</sup>, and Afiamalu being the third highest, receiving 99.5mm on the 15<sup>th</sup>. On the other hand, Tuasivi station did not receive as much rainfall, and was registered the driest station (142.6mm), with the second lowest recorded at Falelima (146.0mm). Furthermore, Table 1 shows that 6 stations received "average" rainfall, 16 stations received "below average" rainfall, and 2 stations registered "well below average". In addition, a graph (Figure 7) showing rainfall in March 2017 is plotted against rainfall received in March 2018, on page 7.

Table 1: Rainfall Statistics in March 2018

This table displays the rainfall status of all stations in the country in March 2018

Stations	March Rainfall (mm)	March 30 Year Long Term Average	% of Average	1 day fall (mm)	Date	# of Rainy Days	Rainfall Status
<b>UPOLU</b>							
Afiamalu	352.1	513	69	99.5	15 <sup>th</sup>	24	Below Average
Alafua	262.7	339	77	40.0	17 <sup>th</sup>	26	Below Average
Apia	262.7	354	74	40.0	17 <sup>th</sup>	23	Below Average
Faleolo	235.9	250	94	102.0	11 <sup>th</sup>	19	Average
Fasitoo	182.6	250	73	38.0	20 <sup>th</sup>	19	Below Average
Gagaifo Lefaga	249.2	352	71	36.4	08 <sup>th</sup>	21	Below Average
Leauvaa	184.4	463	40	29.8	22 <sup>th</sup>	20	Below Average
Lefagaoalii	148.4	249	60	32.4	11 <sup>th</sup>	16	Below Average
Matautu Falelatai	344.1	513	67	69.6	10 <sup>th</sup>	23	Below Average
Nafanua	252.3	392	64	60.0	17 <sup>th</sup>	24	Below Average
Nuu	187.2	252	74	44.6	16 <sup>th</sup>	23	Below Average
Saleilua	194.1	331	59	39.2	18 <sup>th</sup>	21	Below Average
Saoluafata	210.2	428	49	41.4	07 <sup>th</sup>	27	Below Average
Savalalo	242.4	354	68	67.0	17 <sup>th</sup>	19	Below Average
Tanumapua	184.4	463	40	34.4	22 <sup>nd</sup>	16	Below Average
Tiavea	192.0	289	66	28.6	11 <sup>th</sup>	25	Below Average
Vailoa	298.8	314	95	71.0	07 <sup>th</sup>	18	Average
<b>Savaii</b>							
Aopo	292.8	375	78	58.0	28 <sup>th</sup>	23	Below Average
Falelima	146.0	484	30	48.4	20 <sup>th</sup>	17	Well Below Average
Letui	389.8	375	104	108.6	30 <sup>th</sup>	22	Average
Samalaeulu	273.8	313	87	43.8	10 <sup>th</sup>	21	Average
Salailua	216.8	231	94	58.6	01 <sup>st</sup>	20	Average
Tuasivi	142.6	373	38	19.6	25 <sup>th</sup>	21	Well Below Average
Vaiaata	318.4	331	96	54.2	10 <sup>th</sup>	22	Average

**Well Below Average**  
<40%

**Below Average**  
40%-80%

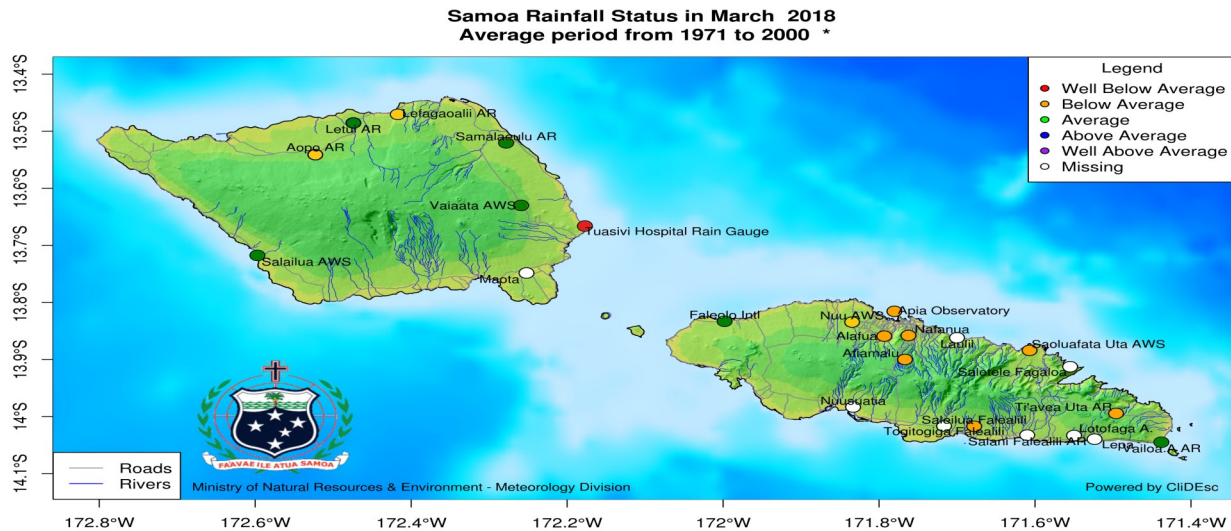
**Average**  
80%-120%

**Above Average**  
120%-160%

**Well Above Average**  
>160%

Figure 3: Rainfall Status Map in March 2018

This rainfall map is generated using observation data from Table 1



\* Newer stations use only data that is available as they do not have enough for a 30 year average

### TEMPERATURE

Table 2: Air Temperature Statistics

This table displays the temperature statistics recorded across stations in March 2018

Stations	Temperature (Degree Celsius)				
	Mean Daily Temperature (°C)	Extreme Temp Max (°C)	Date	Extreme Temp Min(°C)	Date
Faleolo	28.2	33.2	04 <sup>th</sup>	22.3	15 <sup>th</sup>
Afiamalu	22.4	27.8	14 <sup>th</sup>	16.1	31 <sup>st</sup>
Apia	N/A	N/A	N/A	23.2	18 <sup>th</sup>
Alafua	27.0	34.1	14 <sup>th</sup>	22.0	31 <sup>st</sup>
Togitogiga	N/A	N/A	N/A	20.0	08 <sup>th</sup>
Vaiaata	27.9	33.2	27 <sup>th</sup>	22.5	09 <sup>th</sup>
N/A = Data Not Available					

Alafua station recorded the warmest daytime temperature of 34.1° C on the 14<sup>th</sup> of March, with Faleolo station being the second warmest day with 33.2 ° C recorded on the 04<sup>th</sup> . Moreover, the lowest night time temperature of 16.1°C was recorded at Afiamalu on the 31<sup>st</sup> with Togitogiga registering the second lowest temperature of 20.0° C on the 08<sup>th</sup> . Mean daily temperatures for the month of February 2018 ranged from 22.4°C to 28.2°C

### ATMOSPHERIC PRESSURE

Table 3: Atmospheric Pressure at Mean Sea Level (MSL)

This table displays the atmospheric statistics recorded across two stations in March 2018

Station	Highest MSL Pressure (hPa)	Date	Lowest MSL Pressure (hPa)	Date	Average MSL Pressure (hPa)
Apia	1016.7	12 <sup>th</sup>	1007.7	07 <sup>th</sup>	1010.6
Faleolo	1012.7	03 <sup>rd</sup>	1007.9	07 <sup>th</sup>	1010.6

The highest MSL pressure of 1016.7 hPa, was registered at Apia on the 12<sup>th</sup> of March, 2018. Also, both stations recorded their lowest MSL pressure (1007.7hPa for Apia and 1007.9hPa for Faleolo) on the 07<sup>th</sup> of March. (Note: High pressure systems associate with good weather conditions whereas low pressure systems associate with bad weather conditions)

### WIND

Figure 4: Wind Speed and Directions

The following diagrams show the different wind speed and direction that recorded daily at 9am across the country in March 2018.

Figure 4a : Apia Station

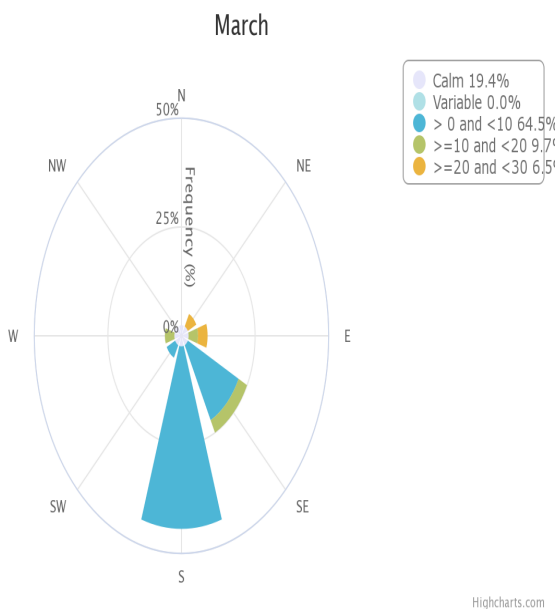
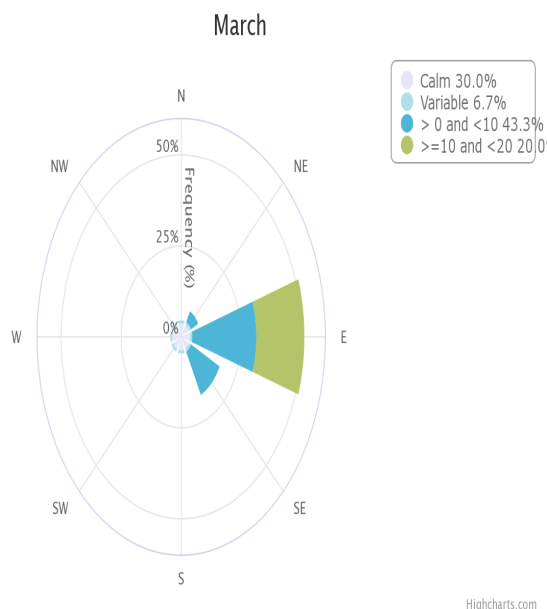


Figure 4b: Faleolo Station



March statistics for Apia Station (Figure 4a) shows southerly winds were the dominant wind direction, with light winds (1-10km/hr) being the most occurring wind speed.

Figure 4b shows that Faleolo station registered easterly winds to be the dominant wind direction and also sustaining light winds (1-10km/hr) for most of March.

Figure 4c : Afiamalu Station

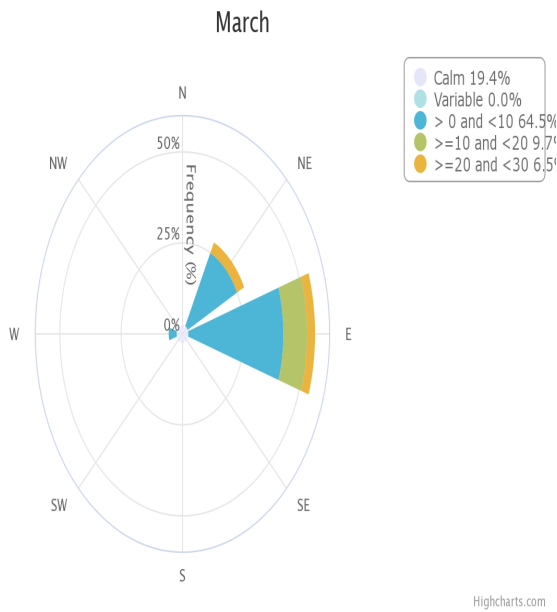
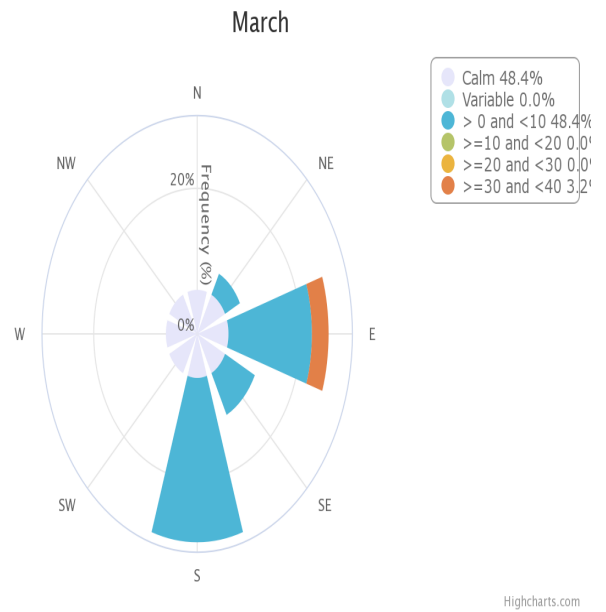


Figure 4d: Nafanua Station



Afiamalu station (Figure 4c) registered easterly winds to be the dominant wind direction with frequent north easterly winds. Wind speeds of 1-10km/hr (Light winds) were the most occurring (64.5%) with noticeable moderate winds (10-20km/hr) experienced within the month.

Although easterlies were highly noticeable, southerly winds still dominated the month of March for Nafanua station. Nevertheless, light winds (1-10km/hr) had the highest occurrence of 48.4%

## EL NINO SOUTHERN OSCILLATION (ENSO)

### CURRENT ENSO STATUS

The El Nino Southern Oscillation is currently in neutral state, meaning it neither leans towards El Nino or La Nina. Atmospheric ENSO Indicators also show neutral levels, and is predicted by models to remain neutral in May and June.

### Atmospheric Indicator of ENSO

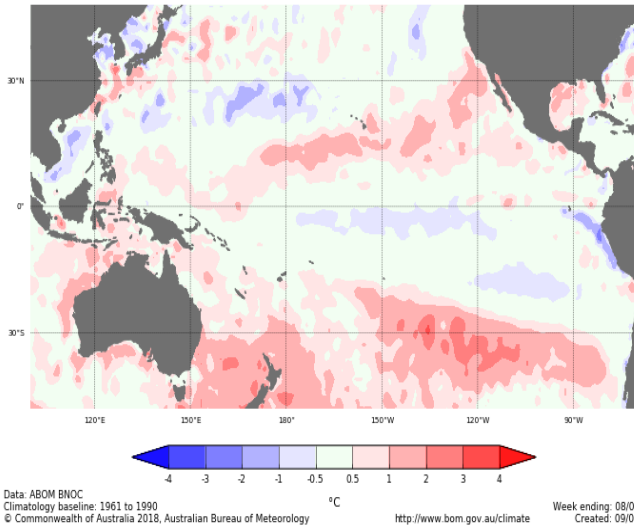
#### Southern Oscillation Index (SOI)

The 30 day Southern Oscillation Index (SOI) to 08<sup>th</sup> of April was +12.4, with the 90 day value of +6.5. The SOI have been fluctuating due to tropical weather systems, but have mostly been in neutral range for the year 2018.

*(Sustained positive values of the SOI above +7 indicate La Nina. Whereas sustained negative values below -7 indicate El Nino. Values within -7 and +7 shows neutral conditions.)*

Figure 5: Sea-surface Temperature

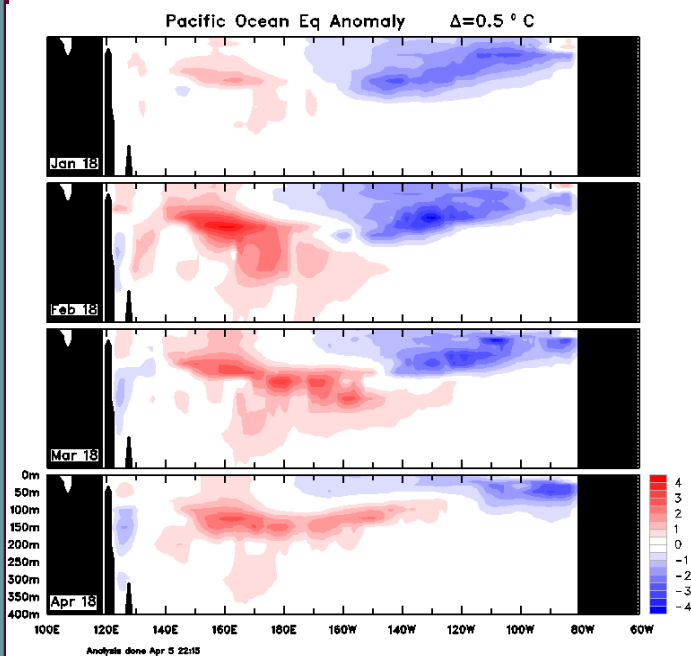
Sea surface temperature anomaly: 02/04/2018 to 08/04/2018



For Sea surface temperatures (SSTs) as shown by Figure 5, the month of March were observed to have cooler than normal anomalies concentrated in the Central and Eastern South Pacific. On the other hand, warm anomalies covered most parts of the South Pacific Ocean, south of the 30° S latitude.

The March value for NINO3 was -0.6° C, NINO3.4 was -0.6° C and NINO4 was 0.0° C.

Figure 6: Sub-surface Temperature



The 4 month sequence of Sub Surface temperatures (Figure 6) shows cooler anomalies in the eastern equatorial region weakening. This is due to warmer than average anomalies located in the western region enhancing and moving towards the eastern side, displacing the cool anomalies. This is a typical indication of a La Nina event decaying.

**APPENDIX**

Figure 7: Graphical representation of total monthly rainfall in March 2017 vs March 2018 in all rainfall stations.

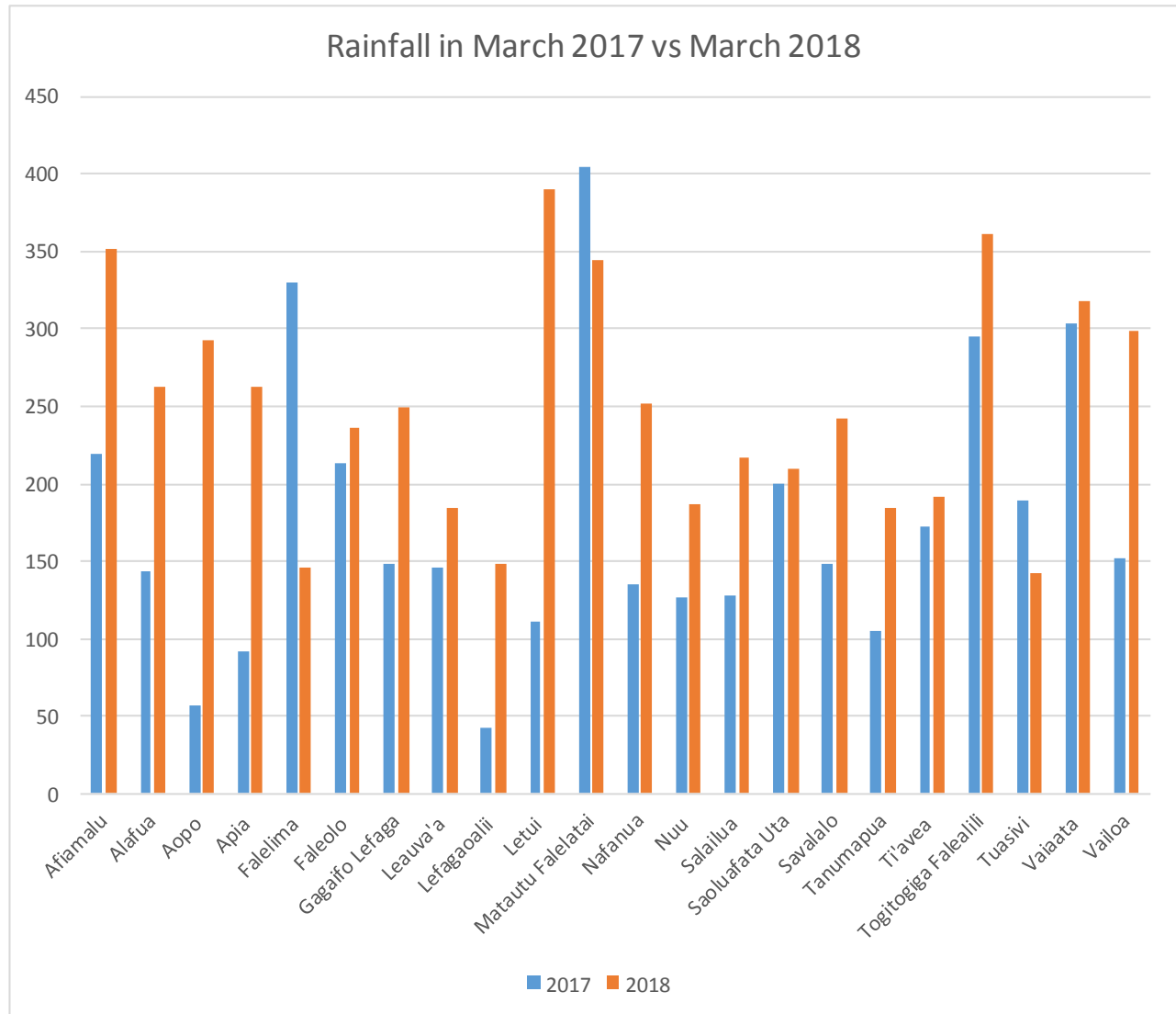


Figure 7 indicates more rainfall activity for March 2018 compared to March 2017.